

REMARKS

Claims 1-22 have been cancelled and replaced by Claims 23-44. These claims are supported by the original claims.

An early action of the merits is respectfully requested.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES

IN THE TITLE:

Please amend the title at pages 1 and 31 to read: --POLYURETHANE SOLUTIONS [WITH] CONTAINING ALKOXYSILANE STRUCTURAL UNITS--.

IN THE SPECIFICATION:

At page 1, line 2 insert the heading --BACKGROUND OF THE INVENTION--.

At page 4, line 3 insert the heading --SUMMARY OF THE INVENTION--.

At page 6, line 20 insert the heading --DETAILED DESCRIPTION OF THE INVENTION--.

IN THE CLAIMS:

Cancel Claims 1-22.

Kindly add the following claims:

23. A polyurethane solution containing alkoxy silane structural units, wherein the polyurethane is the reaction product, in organic solution, of
- a) at least one at least difunctional polyol having a molecular weight of 500 to 16,000,
 - b) at least one at least difunctional polyisocyanate having a molecular weight of 140 to 1,500,
 - c) at least one low molecular weight at least difunctional alcohol and/or amine having a molecular weight of 32 to 500,
 - d) at least one compound containing at least one alkoxy silane group and an isocyanate-reactive group and
 - e) optionally a monofunctional compound containing an amino, alcohol or oxime group,

wherein the equivalents of component d) are at least 50% of the total equivalents of components d) and e).

24. The polyurethane solution of Claim 23 wherein the polyurethane is reaction product, in organic solution, of

- a) 40 to 92 wt.% of at least one at least difunctional polyol having a molecular weight of 500 to 16,000,

- b) 7 to 50 wt.% of at least one at least difunctional polyisocyanate having a molecular weight of 140 to 1,500,
- c) 0.5 to 20 wt.% of at least one low molecular weight at least difunctional alcohol and/or amine having a molecular weight of 32 to 500,
- d) 0.1 to 5 wt.% of at least one compound containing at least one alkoxysilane group and an isocyanate-reactive group and
- e) optionally a monofunctional compound containing an amino, alcohol or oxime group,

wherein the percentages are based on weight of the polyurethane and the equivalents of component d) are at least 75% of the total equivalents of components d) and e).

25. The polyurethane solution of Claim 23 wherein the polyurethane is the reaction product, in organic solution, of

- a) 47 to 88 wt.% of at least one at least difunctional polyol having a molecular weight of 500 to 16,000,
- b) 10 to 40 wt.% of at least one at least difunctional polyisocyanate having a molecular weight of 140 to 1,500,
- c) 0.8 to 17 wt.% of at least one low molecular weight at least difunctional alcohol and/or amine having a molecular weight of 32 to 500,
- d) 0.2 to 3.0 wt.% of a compound containing an alkoxysilane group and an isocyanate-reactive group and
- e) 0-0.5 wt.% of a monofunctional compound containing an amino, alcohol or oxime group,

wherein the percentages are based on weight of the polyurethane and the equivalents of component d) are at least 95% of the total equivalents of components d) and e).

26. The polyurethane solution of Claim 23 wherein at least 50 wt.% of component a) is at least one polycarbonate diol having a molecular weight of 900 to 2,500.

27. The polyurethane solution of Claim 23 wherein component a) contains 10 to 60 wt.% of at least one hydrophilic polyol and 23 to 50 wt.% of at least one

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non-hydrophilic polyol, wherein the percentages are based on the total solids content of the polyurethane, provided that the total amount of component a) is not more than 92 wt.% of the total solids content of the polyurethane.

28. The polyurethane solution of Claim 23 wherein at least 75 wt.% of component b) is isophorone diisocyanate.

29. The polyurethane solution of Claim 23 wherein the component b) comprises 2,4- and/or 2,6-diisocyanatotoluene and/or 4,4'-diisocyanatodiphenylmethane.

30. The polyurethane solution of Claim 23 wherein component b) comprises at least one diisocyanate containing allophanate groups.

31. The polyurethane solution of Claim 23 wherein 2 to 16 wt.% of component c) is a hydrophilic difunctional compound containing salt groups.

32. The polyurethane solution of Claim 23 wherein component c) comprises a hydrophilic compound and component a) comprises a hydrophilic polyol.

33. The polyurethane solution of Claim 23 wherein component c) comprises a positive amount up to 2 wt.%, based on the total solids content of the polyurethane, of a diamino-functional compound containing alkoxysilane groups.

34. The polyurethane solution of Claim 23 wherein component c) comprises 0.1 to 1.5 wt.%, based on the total solids content of the polyurethane, of hydrazine hydrate, adipic acid dihydrazide and/or the reaction product of 2 moles propylene carbonate with 1 mole hydrazine.

35. The polyurethane solution of Claim 23 wherein component d) comprises 0.3 to 1.3 wt.% , based on the total solids content of the polyurethane, of a compound containing an isocyanate-reactive group and at least one alkoxysilane group.

36. The polyurethane solution of Claim 23 wherein component d) comprises a monoamino-functional reaction product containing aspartic acid ester structures of a monoamino-functional alkoxysilane with 0.5 to 1.1 equivalents of a maleic acid alkyl ester.

37. The polyurethane solution of Claim 23 wherein the theoretical content

of -Si(O-)_3 structural units is less than 1.2 wt.%, based on the total solids content of the polyurethane,.

38. The polyurethane solution of Claim 23 wherein component d) comprises 0.3 to 1.3 wt.% , based on the total solids content of the polyurethane, of a monoamino-functional alkoxysilane and component c) comprises 0.1 to 2.0 wt.%, based on the total solids content of the polyurethane, of a diamino-functional alkoxysilane, provided that the weight of terminal alkoxysilane groups is at least 50 wt.% of all the alkoxysilane groups incorporated.

39. A process for preparing the polyurethane solution of Claim 23 which comprises

- a) preparing an isocyanate-functional polyurethane in a one- or two-stage reaction from at least one polyol a), at least one difunctional polyisocyanate b), and at least one low molecular weight component c),
- b) subsequently reacting the product of step a) with at least one compound d) containing an alkoxysilane group and an isocyanate-reactive group and optionally a monofunctional component e) to obtain a high molecular weight polyurethane with alkoxysilane structural units which no longer contains free isocyanate groups, and
- c) adding an organic solvent either before, during or after step a) in an amount such that the resulting polyurethane solution with alkoxysilane end groups has a solids content of 9 to 65 wt.%.

40. The process of Claim 39 which comprises

- a) reacting components a), b) and optionally c) in a one-stage reaction, optionally in the presence of suitable solvents, to obtain an isocyanate-functional high molecular weight polyurethane,
- b) achieving the desired viscosity and molecular weight by optionally adding a an additional amount of polyisocyanate b) and/or low molecular weight difunctional component c), and
- c) chain-stopping the reaction by adding a monoamino-functional compound d) containing an alkoxysilane group.

41. A paint, coating, sealant or adhesive compositions containing the

polyurethane solution of Claim 23.

42. A plastic coated with the polyurethane solution of Claim 23.

43. A textile or leather coated with the polyurethane solution of Claim 23.

44. A textile coated with the polyurethane solution of Claim 23, wherein the coating is permeable to water vapor.--